

11/30/2009

AMENDMENTS TO THE SPECIFICATION

Please replace Paragraph [0027] with the following paragraph rewritten in amendment format:

[0027] An exemplary thermal model using a single state variable, bulk friction device temperature (T_C), is provided according to the following equations:

$$\frac{T_{C\ deriv}}{M_{clutch}} = \frac{1}{M_{friction\ device}} \left(H_R - K_{diss} (T_C - T_{sump}) \right) T_{C\ deriv}$$

$$T_C = T_C + (\Delta t \cdot T_{C\ deriv})$$

where:

H_R = heat rate (input)

T_{sump} = sump temperature (input)

Δt = loop time of the thermal model

$M_{friction\ device}$ = approximate thermal inertia of the friction device system (J/°C)

K_{diss} = heat rejection of friction device and cooling system (W/°C)

The thermal model functions as a low-pass filter that tracks the value $\frac{H_R}{K_{diss}} + T_{sump}$ with a

time constant equal to $\left[\frac{M_{clutch}}{K_{diss}} \right] \frac{M_{friction\ device}}{K_{diss}}$. Any similar low-pass filter function can be

implemented to effectively perform as a thermal model.